Luck Balance

Lena is preparing for an important coding competition that is preceded by N sequential preliminary contests. She believes in "saving luck", and wants to check her theory. Each contest is described by two integers, L_i and T_i:

- L_i is the amount of luck that can be gained by winning the contest. If Lena *wins* the contest, her luck balance will *decrease* by L_i; if she *loses* it, her luck balance will *increase* by L_i.
- T_i denotes the contest's *importance rating*. It's equal to 1 if the contest is *important*, and it's equal to 0 if it's *unimportant*.

If Lena loses no more than K *important* contests, what is the maximum amount of luck she can have after competing in all the preliminary contests? This value *may* be negative.

Input Format

The first line contains two space-separated integers, N (the number of preliminary contests) and K (the maximum number of important contests Lena can lose), respectively.
Each line i of the N subsequent lines contains two space-separated integers, L_i (the contest's luck balance) and T_i (the contest's importance rating), respectively.

Constraints

- $1 \leq N \leq 100$
- $0 \leq K \leq N$
- $1 \leq L_i \leq 10^4$
- $0 \leq T_i \leq 1$

Output Format

Print a single integer denoting the maximum amount of luck Lena can have after all the contests.

Sample Input

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6 3
5 1
2 1
1 1
8 1
10 0
5 0
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Sample Output

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29
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Explanation

There are $N = 6$ contests. Of these contests, 4 are important (so she cannot lose any more than $K = 3$ of them). Lena maximizes her luck if she wins the 3^{rd} important contest (where $L_i = 1$) and loses all of the other five contests for a total luck balance of 29.